

## AMENDMENTS TO THE CLAIMS

1. (Withdrawn) In a process for producing microchannels in a device having a substrate with etched microchannels bonded to a top plate, the improvement comprising:

annealing the bonded device to allow surface tension forces and diffusional effects to lower the overall energy of the microchannels by transforming the cross-section to a circular shape.

2. (Withdrawn) The process of Claim 1, additionally included bonding the substrate and top plate by a method selected from the group consisting of fusion bonding and anodic bonding.

3. (Withdrawn) The process of Claim 1, additionally including providing the substrate and/or the top plate from materials selected from the group consisting of glass, silicon and polymer.

4. (Withdrawn) The process of Claim 1, wherein the substrate and top plate are composed of glass, and wherein the bonding is carried out by fusion or anodic bonding.

5. (Withdrawn) The process of Claim 1, wherein the substrate is composed of glass and the top plate is composed of silicon, and wherein the bonding is carried out by anodic bonding.

6. (Withdrawn) The process of Claim 1, wherein the substrate and top plate are composed of glass, and wherein annealing is carried out at a temperature of 600° to 800°C for a time period of 2 to 24 hrs.

7. (Withdrawn) A method for producing microchannels having no sharp corners in glass, comprising:

isotropically etching at least one channel into a glass substrate,  
bonding a glass plate to the substrate to produce at least one sealed microchannel therein, and

annealing the bonded glass plate and substrate causing transformation of the microchannel cross-section into at least a curved configuration without sharp corners.

8. (Withdrawn) The method of Claim 7, wherein annealing is carried out so as to produce a curved configuration of a substantially circular type.

9. (Withdrawn) The method of Claim 8, wherein the annealing is carried out at a temperature of 600° to 800°C for a time period of 2 to 24 hrs.

10. (Withdrawn) The method of Claim 7, wherein the bonding is carried out by a process selected from the group consisting of fusion bonding and anodic bonding.

11. (Currently Amended) An apparatus having a sealed open microchannel therein, produced by the method comprising:

~~providing~~ an etched open substrate,  
~~providing~~ an etched open microchannel in said etched substrate,  
~~providing~~ an annealed substrate, positioned  
~~positioning said annealed substrate on said etched substrate so that said~~  
~~annealed substrate~~ that covers said etched microchannel in said etched substrate,  
annealing an annealed open microchannel that has been produced by  
~~annealing said etched substrate and said annealed substrate to form an annealed~~  
~~microchannel~~ in said annealed substrate over said etched microchannel in said etched substrate, and

bonding a bond connecting said etched substrate to said annealed substrate, ~~forming a bond connecting said etched substrate and said annealed~~  
~~substrate, wherein said etched~~ wherein said etched open microchannel and said annealed open microchannel comprise said sealed open microchannel.

12. (Currently Amended) The apparatus of Claim 11, wherein said ~~annealing said etched substrate and said annealed substrate to form annealed~~

microchannel is a high temperature ~~annealing~~ annealed microchannel annealed in the 600° to 800° range.

13. (Currently Amended) The apparatus of Claim 11, wherein said etched microchannel in said etched substrate and said ~~annealed~~ microchannel in said annealed substrate form a circular ~~sealed~~ microchannel.

14. (Previously Presented) The apparatus of Claim 11, wherein said etched substrate and said annealed substrate are selected from the group consisting of glass members, glass and silicon members, glass and polymer members, and members selected from the group of glass, silicon and polymers.

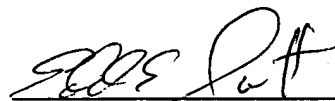
15. (Previously Presented) The apparatus of Claim 11, wherein said bond comprises fusion or anodic bonding.

16. (Previously Presented) The apparatus of Claim 11, wherein said annealed microchannel has depth of about 10  $\mu\text{m}$  and a width of about 20  $\mu\text{m}$  and said annealed microchannel is a high temperature annealed microchannel annealed in the 600° to 800° range.

SUMMARY

The undersigned respectfully submits that, in view of the foregoing amendments and the foregoing remarks presented in the Amendment filed January 31, 2005 and this Response to the Notice of Non-Compliant Amendment, the rejections of the claims raised in the Office Action dated April 20, 2004 have been fully addressed and overcome, and the present application is believed to be in condition for allowance. It is respectfully requested that this application be reconsidered, that the claims be allowed, and that this case be passed to issue. If it is believed that a telephone conversation would expedite the prosecution of the present application, or clarify matters with regard to its allowance, the Examiner is invited to call the undersigned attorney at (925) 424-6897.

Respectfully submitted,



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